Please type a plus sign (+) inside this box	> [+
---	----------------

PTO/SB/08A (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of |2

Complete if Known					
Application Number	09/440,795				
Filing Date	11/15/1999				
First Named Inventor	Christopher Alan Adkins				
Group Art Unit	2734				
Examiner Name					
Attorney Docket Number	LE9-99-140				

Г		76						
205	<u>. </u>	<u> </u>				U.S. PATENT DOC	UMENTS	
		ger Per	Cite No.1	U.S. Patent D	Ocument Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
_ [K	m		4,464,770		Maurer et al.	08/07/1984	
		1		4,513,429		Roeder	04/23/1985	
ı				4,627,079	$\neg \land$	von der Embse	12/02/1986	\
ı	7		au	4,697,519		Rice, Jr. et al.	10/06/1987	
ı			1	4,706,263		von der Embse	11/10/1987	· ·
ı	\neg	1	1	4,712,223		Nelson	12/08/1987	6
ı	寸	\neg	Pon	4,816,722		Shigemori	03/28/1989	6,33
ı			1	4,820,993	ام	Cohen et al.	04/11/1989	
	\neg			4,821,293	3	Shimizume et al.	04/11/1989	
				5,005,016		Schmidt et al.	04/02/1991	
				5,109,394		Hjerpe et al.	04/28/1992	
				5,184,093		Itoh et al.	02/02/1993	:
				5,258,933		Johnson et al.	11/02/1993	- 1
				5,295,079		Wong et al.	03/15/1994	2 0 A
				5,299,237		Head	03/29/1994	() () -
				5,347,234		Gersbach et al.	09/13/1994	R 2/5
				5,351,275		Wong et al.	09/27/1994	2 /2
				5,359,631		Behrens et al.	10/25/1994	<u> </u>
				5,373,255		Bray et al.	12/13/1994	73 73
ſ	P	?		5,400,364		Yada	103/21/1995 I	7

				FORE	IGN PATENT DOCUMENT	rs		
C	Cita	F	Foreign Patent Do		Name of Patentee or	Date of Publication of	Pages, Columns, Lines, Where Relevant	
Examiner Initials*	Cite No. ¹	Office ³	Number ⁴	Kind Code ⁵ (if known)	Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear	Le
							··	_
			<u> </u>					+
		 			<u> </u>			+
								-
		 						
\vdash		 						

Examiner Signature	Date Considered	8/8/74

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

OCT 2

▲Sheet

PTO/SB/08A (10-96) Approved for use through 10/31/99. OMB 0651-0031 Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

bstitute for form 1449A/PTO ORMATION DISCLOSURE ATEMENT BY APPLICANT

09/440,795 **Application Number Filing Date** 11/15/1999 First Named Inventor Christopher Alan Adkins Group Art Unit 2734 **Examiner Name**

Complete if Known

(use as many sheets as necessary)

of 12 Attorney Docket Number LE9-99-140

	ארב	1 N					U.S. PATENT DOCI	UMENTS	_
OET	2020	Examitiq	ner	Cite No.1	l Number	ocument Kind Code	Name of Patentee or Applicant	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
			m		5,450,452		Kakuishi et al.	09/12/1995	
ट्रे		S			5,477,177		Wong et al.	12/19/1995	
B	ademb'	4	Π	T	5,502,711		Clark et al.	03/26/1996	
			П	T^{-}	5,543,754		Onodera	08/06/1996	
			П	1	5,572,157		Takashi et al.	11/05/1996	
				Pa	5,572,167		Alder et al.	11/05/1996	420
			П	72	5,602,883	43	Stephens et al.	02/11/1997	
				$\neg \top$	5,619,543		Glass	04/08/1997	
			\Box		5,652,773		Lu	07/29/1997	
			\prod		5,692,014		Basham et al.	11/25/1997	
			\Box		5,727,038		May et al.	03/10/1998	
					5,034,083		Campanelli et al.	07/23/1991	
		P	m	1	5,221,397		Nystrom	06/22/1993	<u> </u>
									TEP O RA
									REC OCT CF C
									040
									E VET
									= + <
								<u> </u>	72 C

				FORE	IGN PATENT DOCUMENT	rs	0	
	0:4-	F	oreign Patent Do		Name of Patentee or	Date of Publication of	Pages, Columns, Lines, Where Relevant	
Examiner Initials*	Cite No. ¹	Office ³	Number ⁴	Kind Code ⁵ (<i>if known</i>)	Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear	L _e
							. .	<u> </u>
								-
							 	\vdash
		╁╌╏╴						
	-	 						
		i -						
							<u> </u>	lacksquare
		1 1		1 1				1

Examiner Signature	Date Considered	8/8/74

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Please type a plus sign (+) inside this box 🛶 🦳	+
---	---

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicati n Number 09/440,795

Filing Date 11/15/1999

First Named Invent r Christopher Alan Adkins

Group Art Unit 2734

Examiner Name

Complete if Known

(use as many sheets as necessary)

Speet 2 of 3 Attorney Docket Number LE9-99-140

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner nitials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
pm		ROCHA, L. F., "Simulation of a Discrete PLL with Variable Parameters," Proceedings of the IEEE, Vol. 67 (No. 3), p. 440-442, (March 1979).	L
		BYRNE, C. J., "Properties and Design of the Phase-Controlled Oscillator with a Sawtooth Comparator," The Bell System Technical Journal, p. 559-602, (March 1962).	
		GUPTA, S. C., "Phase-Locked Loops," Proceedings of the IEEE, Vol. 63 (No. 2), p. 291-306, (February 1975).	
		MUIRA, GORO AND AKIO TAKANO, "Phase-Locked-Loop Speed Control of Motors by PID Feedback of Phase Difference," Electrical Engineering in Japan, Vol. 107 (No. 4), p. 104-144, (May 1987).	b
	PAS	ABDEL-AZIM, SANAA AND JIM DREILING, "Digital Control of a Brushless-DC Motor," IEEE Control Systems Magazine, p. 31-35, (October 1987).	7 8 17
		GUPTA, S. C., "On Optimum Digital Phase-Locked Loops," IEEE Transactions of Communication Technology, Vol. COM (No. 16), p. 340-344, (April 968).	Ĺ
		YAMAMOTO, H. AND S. MORI, "Performance of a Binary Quantized All Digital Phase-Locked Loop with a New Class of Sequential Filter," IEEE Transactions On Communications, Vol. COM-26 (No. 1), p. 35-45, (January 1978).	
		LINDSEY, WILLIAM C. AND CHAK MING CHIE, "A Survey of Digital Phase-Locked Loops," Proceedings of the IEEE, Vol. 69 (No. 4), p. 410-431, (April 1981).	
		LABINGER, R. L., "Designing Phase Locked Loop Servos With Digital ICs," Control Engineering, p. 46-48, (February 1973).	
		SMITHGALL, DAVID H., "A Phase-Locked Loop Motor Control System," IEEE Transactions on Industrial Electronics and Control Instrumentation, Vol. IEC-22 (No. 4), p. 487-490, (November 1975).	
Pm		PRASAD, E. S. N., G. K.DUBEY, AND SRINIVASA S. PRABHU, "High-Performance DC Motor Drive with Phase-Locked Loop Regulation," IEEE Transactions on Industry Applications, Vol. IA-21 (No. 1), p. 192-201, (January/February 1985).	

Examiner Signature	RM	Date S/8/03

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Please type a	plus	sign (+) in	side this	box 🛶	\Box
,					

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT

C mplete if Known 09/440,795 **Application Number** 11/15/1999 Filing Date Christopher Alan Adkins First Named Inventor 2734 Group Art Unit Examiner Name

(use as many sheets as necessary)

מל דיות	2000	1 (4	ise as many sneets	as necessary)	Examiner Ivalite		
ybi - •	Sheet	1	of 2	3	Attorney Docket Number	LE9-99-140	
2 .	ć Y						
E BADE	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS						
OCT 2 0	Examiner Initials*	Cite No.1		magazine, journal, serial,	PITAL LETTERS), title of the article (w symposium, catalog, etc.), date, page r, city and/or country where published	e(s), volume-issue number(s),	T²
	pm		MOORE, A.W p. 61-67, (Apr		Loops for Motor-Speed Co	ontrol," IEEE Spectrum,	
					se Control Techniques," IR CS (No. 8), p. 237-246, (I		
			HARASHIMA, I Microprocessor-	F., H. NAITOH, M. Based Digital PLL S		O, "Performance Improvement in Transactions on Industrial	
			LARIMORE, V p.14-20, (Octo		f Digital Phase-Locked Lo	ops," 1968 EASCON,	
	GARODNICK, J., J. GRECO AND D. L. SCHILLING, "Response of an All Digital Ph Loop," IEEE Transactions on Communications, Vol. COM-22 (No.6,), p. 751-763, (Jun GILL, G.S. AND S. C. GUPTA, 'First-Order Discrete Phase-Locked Loop With Ap			o.6,), p. 751-763, (June 1974).			
			GILL, G.S. AND To Demodulation p. 454-462, (Ju	on Of Angle-Modul	First-Order Discrete Phase-Lated Carrier," IEEE Transac	cocked Loop With Applications ctions on Communications,	
			Second-Order D		d Loops," IEEE Transaction	onuniform Sampling First-And as on Communications Vol.	
			KOIZUMI, T. A	ND H. MIYAKAV	WA, "Statistical Analyses of	Digital Phase-Locked Loops Tol. COM (No. 25), p. 733-735	
			CHIE, C.M., "M Loops," IEEE Tr	athematical Analogi ansactions on Comm	es Between First-Order Digit nunications, Vol. COM-26 (Y	al and Analog Phase-Locked No. 6), p.860-865, (June 1978).	
			Phase-Locked 1	C. AND C. M. C. Loop," IEEE Trans September 1978)		r of a First-Order Digital ns, Vol. COM-26 (No. 9),	
	pm		A Graphical A	I. A. AND F. RUS nalysis," IEEE Tra (September 1978)	nsactions on Communicat	Digital Phase Locked Loop: ions, Vol. COM-26 (No. 9),	

I Signature 1 V C V V V	Examiner Signature	Pulli.	Date Considered	-/s/ 03
-------------------------	-----------------------	--------	--------------------	----------------

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Please type a	plus sign (+)	inside this bo	× →	+

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO			Complete if Known		
			Application Number	09/440,795	
INF	ORMATION	DISCLOSURE	Filing Date	11/15/1999	
STATEMENT BY APPLICANT		First Named Invent r	Christopher Alan Adkins		
017	71 EIVIEIVI -	JI AII LIOANI	Group Art Unit	2734	
	(use as many s	heets as necessary)	Examiner Name		
Sheet	3	of 3	Attorney Docket Number	LE9-99-140	

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
Pin	Pag	LIN, H. Y., M. C. LU, J. H. HORNG, T. B. YANG, S. C. HSIEH, C. Y. HSIAO, H. M. TAI AND J. S. CHEN, "DC Servo Speed Control of an Inkjet Print Head Transport System Using a Phase-Locked Loop," Proceedings of the 1996 4th Int'l Workshop on Advanced Motion Control, p. 458-463, (March 1996).	
fm		NASH, G., "Phase-Locked Loop Design Fundamentals," AN535 Application Note, Motorola, Inc., p. 1-13, (October 1994).	17
		Pm.	·
			$\overline{}$
Examine Signature		Date Considered 8/8/03	

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.